

Applicant : Eberhard Piehler
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REMARKS

This is in response to the Office Action mailed July 18, 2008. With this action, the Examiner has objected to the drawing figures as not showing every feature of the invention specified in the claims. The Examiner has also rejected claims 24-27, 29-32, and 44-46 under 35 U.S.C. § 102(b) as being anticipated by Wang (U.S. 2002/0057418). Claim 28 was rejected under § 103(a) as being unpatentable over Wang ‘418 and further in view of Hayashi et al. (U.S. 6,315,415). Claims 33-40, 43, 47, 48, 50, and 51 were rejected under § 103(a) as being unpatentable over Wang ‘418 and further in view of Ohzawa (U.S. 6,118,501). Claim 49 was rejected under § 103(a) as being unpatentable over Wang ‘418 and further in view of Sugawara (U.S. 5,926,316). Finally, claims 41 and 42 were indicated as allowable if the claim were rewritten with the limitations used in the rejected base claim. With this amendment, claims 24-32, 35-44, and 46-48 remain pending in the application. Applicant respectfully traverses the Examiner’s rejections and requests reconsideration of the application.

The present invention is directed to a projection device that includes a reflective light modulator for generating an image, a light source unit for illuminating the light modulator, and projection optics which include first and second partial optics, the projection optics have an optical axis. Each optical boundary surface of each lens of the first partial optics is curved and/or arranged by offset and/or tilting such that, in a reference plane in which the optical axis of the projection optics is located and which is divided by the optical axis into upper and lower half-planes, each reflection ray bundle exiting the first partial optics proceeds completely either into the first or into the second half-plane. Thus, the invention prevents the reflection ray bundles from being projected onto the projection surface.

Initially, the drawings were objected to as not showing features specified in claims 28, 45, 49, 50, and 51. In response thereto, Applicant now submits substitute FIG. 4 (along with a marked-up version of original FIG. 4), which illustrates a “deflecting element” recited in claim 28 which allows the right rays to bend substantially orthogonally to the second group of lenses 14. Accordingly, the objection to the drawings based on the limitations set forth in claim 28 should withdrawn. With regard to the objection to claims 45, 49, 50, and 51, these claims have

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now been canceled and the Examiner's objection to the drawings under Rule 83(a) is now moot and should be withdrawn.

Claims 24-27, 29-32, and 44-46 were rejected as being anticipated by Wang. Wang teaches a method and apparatus for use in a projection display to prevent ghost images on or near a projected image. Wang operates by changing the surface profile of a surface field lens by means of a protrusion or recess, such that a ghost image is scattered or reflected to an area outside of a lens stop. The Examiner should recognize that the present invention differs from Wang in that reflection through the projection lens is avoided by an "offset and/or tilting" of one of the component lenses. In Wang, the first partial optics is not offset and/or tilted such that each reflection ray bundle exiting the first partial optics proceeds completely either into the first or into the second half-plane. Wang assumes that the reflection comes from a small area and uses a recess (see FIGs. 4A and 4C) or a protrusion (see FIGs. 4B and 4D) to manage the reflection. Additionally, the prior art used by the Examiner in the rejection of claims 28, 35-40, 43, 47, and 48 under § 103(a) by Hayashik et al., Ohzawa, or Sugawara also does not teach or suggest a system that operates in the manner claimed.

In order to facilitate prosecution of this application, Applicant's claim 24 has now been amended to indicate that "the first partial optics is offset and/or tilted in the reference plane relative to the optical axis." Claim 24 now better defines a system that is distinct from Wang, as Wang utilizes a different approach to addressing the issue of reflected rays in the projection path.

Applicant believes that these arguments now place claims 24-32, 35-44, and 46-48 in condition for allowance. An early notice thereof is earnest solicited. Should the Examiner have comments or suggestions that would expedite the allowance of this application, he is respectfully requested to telephone the undersigned.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. Moreover, no amendment made was for the purpose of narrowing the scope of any claim unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

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Please charge any additional fees associated with this amendment and credit any overpayments to Deposit Account No. 16-2463.

Respectfully submitted,

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